OPEN ACCESS

KING'S College LONDON

King's Research Portal

DOI:
10.1016/j.ijcard.2017.06.062

Document Version
Peer reviewed version

Link to publication record in King's Research Portal

Citation for published version (APA):
Bisogni, V., Pengo, M. F., Drakatos, P., Maiolino, G., Kent, B., Rossitto, G., Steier, J., & Rossi, G. P. (2017). Excessive daytime sleepiness, sympathetic nervous system activation and arterial stiffening in patients with mild-to-moderate obstructive sleep apnoea. Reply. *International Journal of Cardiology*, *249*, 415-416. https://doi.org/10.1016/j.ijcard.2017.06.062

Citing this paper
Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights
Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

•Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
•You may not further distribute the material or use it for any profit-making activity or commercial gain
•You may freely distribute the URL identifying the publication in the Research Portal

Take down policy
If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 05. May. 2023

Letter to the Editor

Excessive daytime sleepiness, sympathetic nervous system activation and arterial stiffening in patients with mild-to-moderate obstructive sleep apnoea. Reply

Valeria Bisogni [a,*], Martino F. Pengo [a], PanagisDrakatos [b], GiuseppeMaiolino [a], BrianKent [b], Giacomo Rossitto [a], Joerg Steier [b,c], Gian Paolo Rossi [a]

[a] Clinica dell'Ipertensione Arteriosa, Dept. of Medicine—DIMED, University of Padua, Italy
[b] Guy's and St. Thomas' NHS Foundation Trust, Lane Fox Respiratory Unit/Sleep Disorders Centre, London, UK
[c] King's College London, Faculty of Life Sciences and Medicine, London, UK

Article history:
Received 14 June 2017
Accepted 15 June 2017
Keywords:
Mild-to-moderate obstructive sleep apnoea
Excessive daytime sleepiness
Arterial stiffness
Heart rate variability

To Dr. Kawada, Department of Hygiene and Public Health, Nippon Medical School

We are grateful toDr. Kawada for his comments [1] and interest in our work [2].Multiple potential confounders of excessive daytime sleepiness (EDS) have been established besides obstructive sleep apnoea (OSA) and may include gender, age [3], sleep habits, psychiatric disorders, obesity, and diabetes [4]. In our study [2] selected patients without these factors were studied; they had high sleep efficiency during full polysomnographic sleep recording. However, in this sample of patients the respiratory disturbance index (RDI) did not correlate with the Epworth Sleepiness Scale (ESS) score (RDI 16.1 ± 7.1 vs 17.2 ± 6.7/h, p = 0.59, comparing “nonsleepy” (ESS b 10) with “sleepy” (ESS ≥ 10) patients).

A multivariate regression analysis with adjustment for confounders (body mass index, apnoea/hypopnea index, and oxygen desaturation index) proved that the ESS, as a continuous variable, did not significantly predict the arterial stiffness derived index ($F = 2.41$, adjusted $R_2 = 0.028$, $p = 0.127$) and heart rate variability indices ($F= 0.34$, adjusted $R_2= -0.014$, $p= 0.564$), which supports our conclusions.

Finally, it has been established that severe OSA is an independent cardiovascular (CV) risk factor [5]. Hence, we investigated mild-tomoderate OSA patients and whether there was any difference in markers of CV risk, including detectable signs of increased sympathetic nervous system activity and arterial stiffness, and whether this was related to EDS. Although our study is a “proof-of-principle study”, the results obtained were clear-cut and tested the hypothesis that mildto-moderate OSA and EDS have a role in CV risk. Further stratification of OSA patients in terms of CV risk will help to focus future therapeutic strategies in these patients.

Author contributorship

These authors take responsibility for all aspects of the reliability and freedom from bias of the data presented and their discussed interpretation.

Conflicts of interest

The authors report no relationships that could be construed as a conflict of interest.

Acknowledgements and founding

Dr. Steier's contribution was partially supported by the National Institute for Health Research (NIHR) Biomedical Research Centre based at Guy's and St Thomas' NHS Foundation Trust and King's College London. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

References

[1] T. Kawada, Excessive daytime sleepiness, sympathetic nervous system activation and arterial stiffening in patients with mild-to-moderate obstructive sleep apnoea, Int. J. Cardiol. 249 (2017) 414.
[2] V. Bisogni, M.F. Pengo, P. Drakatos, G. Maiolino, B. Kent, G. Rossitto, et al., Excessive daytime sleepiness does not correlate with sympathetic nervous system activation and arterial stiffening in patients with mild-to-moderate obstructive sleep apnoea:

A proof-of-principle study, Int. J. Cardiol. 236 (2017) 458–461.
[3] E. Sforza, V. Pichot, M.S. Martin, J.C. Barthélémy, F. Roche, Prevalence and determinants of subjective sleepiness in healthy elderly with unrecognized obstructive sleep apnea, Sleep Med. 8 (2015) 981–986.